### Implementing PrEP: Next Steps

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### Trials and Implementation Science

#### Trials assess:

- IF used, does it work?
- IF used, is it safe?
- Are the benefits of using it greater than the risks?

#### Implementation science assesses:

Who Who needs it most? Who wants it? Who will provide it?

What What is needed to deliver it well?

Where do people seek it from?

How How can the system adapt to deliver it well?

How much How much does it cost - individuals, systems?

### Efficacy by Adherence

Intervention	mITT	Self-report or pill count		Biological Measure
Male condom (HET)	-	80% (always vs never)	<10% (sometimes vs never)	85% (no PSA detected)
PrEP (iPrEx, MSM)	44%	73% (>90% self report)	50% (>50% self report)	92% (drug detected)
PrEP (Partners PrEP, HET)	75%	100% (>80% pill count)	_	90% (drug detected)

# Interim Guidance\* For PrEP Use With HIV-Uninfected Sexually-Active Adults

	MSM	HRH	
At Very High Risk of Acquiring HIV Infection	HIV+ partner STI history, high number of sex partners History of inconsistent or no condom use Commercial sex work		
		In high prevalence area or network	
Clinically Eligible	Documented negative HIV test before prescribing PrEP No signs/symptoms of acute HIV infection Normal renal function, no contraindicated medications Documented hepatitis B virus infection/vaccination status		
Prescription	Daily, continuing, oral doses of TDF/FTC (Truvada®), ≤ 90 day supply		
Other services	Follow-up visits at least every 3 months to provide:  HIV test, medication adherence counseling, behavioral risk reduction support, side effect assessment, STI symptom assessment At 3 months and every 6 months after, assess renal function Every 6 months test for bacterial STIs		
	Do oral/rectal STI testing	Assess pregnancy intentions Every 3 months do pregnancy test	

#### \*Main points only. See source documents:

- CDC. Interim guidance: preexposure prophylaxis for the prevention of HIV infection in men who have sex with men. *MMWR*. 2011;60(3):65–68.
- CDC. Interim guidance for clinicians considering the use of preexposure prophylaxis for the prevention of HIV infection in heterosexually active adults. *MMWR*.2012;61(31):586-590.

#### Recruit **PrEP Flow Diagram - Provider Perspective** Self-referral Network referral Venue outreach Health services **CBOs** Low Risk Risk Lab HIV High Educate Neg Yes Eligible Consent? Yes Screen Screen Test Risk Interest? Not Pos Mod No No Eligible Risk Refer for risk-reduction services Refer for care Pos Refill Prescription Adherence Adherence Client Receives HIV Counseling Neg Counseling PrEP Services\* 3 months Test Risk Reduction **Risk-Reduction** Counseling Counseling

\* Including indicated STI diagnosis and treatment

Serious Toxicities

### Who needs to engage PrEP?

#### Persons

- without HIV infection
- with high risk of HIV acquisition
  - Sexual behaviors that may lead to HIV exposure
  - Sexual partners and networks where HIV is present
  - Communities were HIV prevalence is high

#### HIV prevention service providers

- Health care providers
- Non-clinical community-based organizations
- Local and state health departments

# How many potential PrEP users in the US?

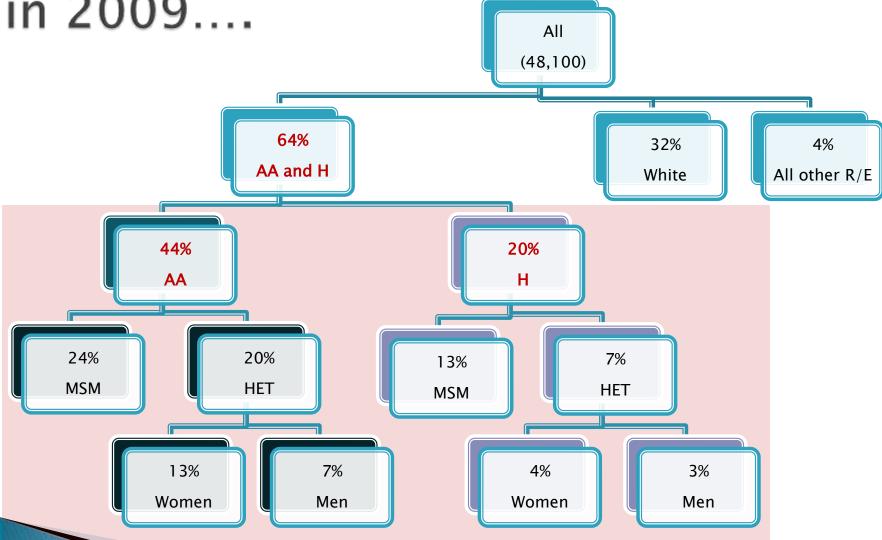
#### MSM

- NHANES (2001–2006)
  - 1.8 million men aged 18-59 years reported sex with a man in prior year and self-identify as gay
    - 47% reported >2 male sex partners in past year
    - 83% HIV-uninfected
- National Survey of Sexual Health and Behavior
  - No condom use among gay men during most recent sexual event was 39%
- 275,000 uninfected gay men with >2 male sex partners in past year and no condom use at last anal sex

### Heterosexual discordant couples

- Estimated from multiple population-based data sources
- At least 140,000 discordant heterosexual couples in the U.S.
- Approximately ½ intend future pregnancies

Of all estimated new HIV infections in 2009....



### PrEP - Benefits and risks (so far)

- Primary care benefits?
  - hepatitis vaccination, reproductive health care
- Resistance?
  - Uncommon if screening for acute infection
- Toxicities/side effects
  - Few, mild, and transient
- Adherence?
  - Poor in some trials, high in others
- Risk compensation?
  - Not seen (yet), models suggest unlikely to exceed benefit
- Cost-effective?
  - Yes, if targeted to those with high incidence

### Consistency of Condom Use

#### Impact on HIV incidence

#### Consistent Use Over Time

- Heterosexuals
  - Always vs never use
    - 80% efficacy (Cochrane)
    - 63% efficacy (Ahmed)
  - Sometimes vs never use
    - 4% (Ahmed)
- MSM
  - 777



Source: Peterman et al. Int J STD 2009: 20 (1):9-13.

### Rethinking Combination Prevention Outcomes

		PrEP Efficacy (Self-Report)		
		Never Use (0%)	Sometimes Use (44%)	Always Use (78%)
	Always Use (80%)	80%	80% +	80% ++
Condom Efficacy (Self-Report)	Sometimes Use (10%)	10%	44% +	78% +
	Never Use 0%)	0%	44%	78%

### Access for Adolescent Minors

- Allowed to consent for HIV testing?
- Allowed to consent for PrEP?
  - Not exempt as reproductive health/family planning
  - Not exempt as "diagnosis or treatment" of STI
  - Few expressly permit for prevention of HIV/STI for adolescent minors
- Parental insurance and adolescent privacy
- Allowed to consent for HIV treatment?

### Overcoming Initial Barriers

- Cost
  - Insurance coverage
  - Medication assistance program
- Clinician identification, education, support
  - Prevention Training Centers (clinical PTCs)
  - AETC
- Identifying and informing candidates for PrEP use
  - In discordant couples
  - STI patients
  - Health centers in high prevalence neighborhoods
  - Special population clinics
- Coordinating PrEP with other services
  - HIV/STI partner notification services
  - Behavioral support services
  - Medication adherence support services
  - TasP

# PrEP Efficacy Trials Underway – Results Pending

Dosing	Population	Name	Results Expected
Daily	IDU	Bangkok Tenofovir Study	2013
Daily	Women	VOICE (TDF/FTC)	2013
Daily	Women	VOICE (TDF)	2013*

### Next Steps for Public Health Agencies

- Support the inclusion of effective biomedical interventions in comprehensive HIV prevention
  - With appropriate coverage and service quality to maximize safety and impact on HIV incidence
  - That reduces racial/ethnic/economic disparities in access, use, and impact

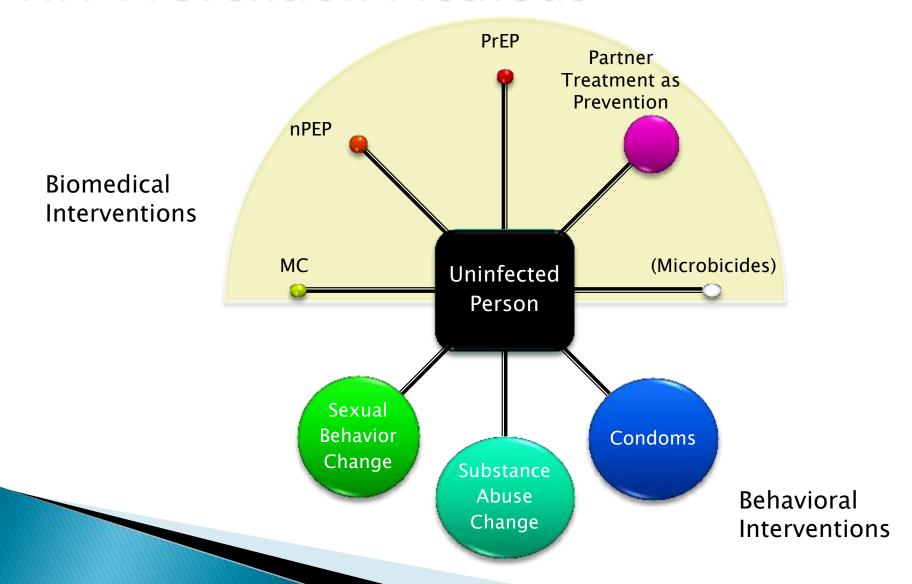
#### Evaluate

Quality, safety, cost, and impact of nPEP and PrEP use

#### Provide

- Timely, accurate, and user-friendly information resources to clients, providers, program managers, policymakers, and advocate
- Prepare for the next effective intervention(s)

# Combining Partially-Effective HIV Prevention Methods



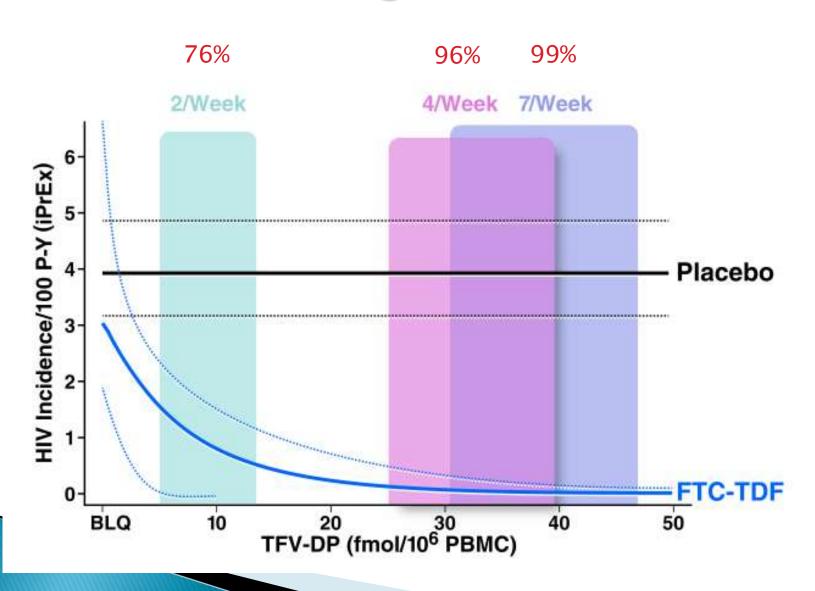


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### Adherence "forgiveness"



### Intermittent PrEP Adherence IAVI East African Trial

- 72 MSM and FSW in Kenya
- 72 Discordant Couples in Uganda
- Truvada vs. Placebo 2:1
- Daily vs. twice weekly and post exposure (1:1)MEMS data adjusted for curiosity openings

Regimen	MSM/FSW % (IQR)	Couples % (IQR
Daily	92% (79–99%)	97 (93–100%)
Non-daily Fixed Doses	<b>55%</b> (28–88%)	91% (77-98%)
Post Exposure Doses	<b>26%</b> (14–50%)	<b>45%</b> (20–63%)